

- C1  
Cont
- b) at least one organic complexing agent
  - c) water and/or
  - d) at least one polyether and/or
  - e) at least one surface-active substance, with the proviso that at least component a) and at least two of the components b) to e) have to be present
- wherein said catalyst suspension is not an intermediate and is directly used as a polymerization catalyst in the ring-opening polymerization of alkylene oxides.

Please add the following new claim:

- C2
15. (New) A catalyst suspension as claimed in claim 1, wherein said content of said platelet-shaped particles includes primary particles having a length and a width that are at least three times greater than a thickness said primary particles.

#### REMARKS

Claims 1-12 remain in the application with claim 1 remaining in independent form. Applicant has amended claim 1. Applicant has also added dependent claim 15 such that claims 1-12 and 15 remain pending in the subject application after entry of the subject amendment. There is full support in the specification as originally filed for the amendments to claim 1 and for added claim 15. Specifically, page 8, lines 26-29 of the application as originally submitted describes the substance claimed in added claim 15. No new matter has been introduced.

Claims 1-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by EP 0,761,708 or under 35 U.S.C. § 102(a) as being anticipated by WO 99/19063 (United States Patent No. 6,323,375 is an equivalent). In view of the clarifying amendments to independent claim 1, Applicant respectfully traverses these rejections. The '375 patent is referenced below.

In the subject invention, Applicant is claiming a catalyst suspension for the ring-opening polymerization of alkylene oxides. Independent claim 1 positively recites the requirements for this catalyst suspension. More specifically, the catalyst suspension includes at least one multimetal cyanide compound (a) and/or at least one organic complexing agent (b), water (c) and/or at least one polyether (d) and/or at least one

surface-active substance (e), with the proviso that at least component (a) and at least two of the components (b) to (e) have to be present. The at least one multimetal cyanide compound must have a crystalline structure and a content of platelet-shaped particles of at least 30% by weight, based on the multimetal cyanide compound. Finally, claim 1 has also been amended, as suggested by the Examiner in the interview of January 16, 2003, to further clarify that the claimed catalyst suspension is not an intermediate. That is, the Applicants are not claiming an intermediate. Instead, the catalyst suspension as claimed in independent claim 1 is a polymerization catalyst, i.e., a final product, that is used directly in the ring-opening polymerization of alkylene oxides. The crystalline structure of the multimetal cyanide compound is more specifically claimed in dependent claims 2-8.

Importantly, with reference to page 3, lines 8-16 of the specification as originally submitted, an object of the present invention is to use crystalline multimetal cyanide compounds in a form, i.e., in a suspension, which gives them a very high catalytic activity. This object has been surprisingly achieved by suspending crystalline multimetal cyanide compounds in organic or inorganic liquids and using them as catalysts in this suspended form. From the above citation, it is clear that the suspended form, and not a solid or dry powder form, of the crystalline multimetal cyanide compounds is used as a catalyst.

On page 3 of the pending Office Action, the Examiner states that:

[b]oth EP 0,761,708 and WO 99/19063 disclosed compositions comprising multimetal compounds in suspension form with at least two additional substances selected from the group consisting of water, polyether, and surface-active substances. The compositions are made in the identical manner to those of the instant examples and therefore the artisan would expect them to be identical to those being claimed herein. The intermediate product of each of the references prior to drying in the reference examples is indistinguishable from the instantly claimed suspension.

In view of the clarifying amendments to independent claim 1, it is now clear that claim 1 requires the complete catalyst, and not simply a multimetal cyanide compound, in suspension form. The '708 patent application does not disclose, teach, or suggest a catalyst suspension that is a final product polymerization catalyst, i.e., not an intermediate, and that is used directly in the ring-opening polymerization of alkylene

oxides. On page 3, line 31 of the '708 patent application, the DMC catalyst is "solid" and, therefore, not in suspension. On page 4, lines 33-47, prior to its use as a catalyst in forming polyols, the catalyst slurry is isolated, washed, and then dried. Furthermore, as originally described above, claim 1 also positively requires that the multimetal cyanide compound have a crystalline structure and a content of platelet-shaped particles of at least 30% by weight, based on the multimetal cyanide compound. The '708 patent application does not disclose, teach, or suggest a multimetal cyanide compound having such a crystalline structure, nor does the '708 patent application disclose, teach, or suggest such a content of platelet-shaped particles. Persons of ordinary skill in the art recognize that a particular crystallinity, as claimed herein, is not easily obtained. Because the '708 patent application does not disclose each and every positively recited limitation of independent claim 1, it is an improper reference under 35 U.S.C. § 102(b).

Similarly, the '375 patent does not disclose, teach, or suggest a catalyst suspension that is a final polymerization catalyst product. Instead, the '375 patent merely discloses an intermediate form of the catalyst that happens to be in suspension form at a certain point in the preparation process. Such suspensions are not uncommon during the preparation of the catalyst. However, as explained clearly in the '375 patent (*see column 5, line 60*), the catalyst is, ultimately, removed from the suspension. Finally, although the '375 patent does describe that the catalyst is preferably "substantially crystalline", it never discloses, teaches, or otherwise suggests the claimed weight % of platelet-shaped particles. Furthermore, it never discloses, teaches, or otherwise suggests that the crystalline catalyst be present in a suspension form as a final polymerization catalyst product to form polyols. Because the '375 patent does not disclose each and every positively recited limitation of independent claim 1, it is an improper reference under 35 U.S.C. § 102(a).

Finally, relative to any potential rejection under 35 U.S.C. § 103, the Applicants respectfully remind the Examiner of the preexistence of the Declaration Under 37 CFR 1.132. This Declaration provides additional evidence relating to the unexpected benefit of the catalyst suspension claimed in the present application. In this Declaration, a catalyst preparation was made in accordance with the present application and then, at the last step, the formed multimetal cyanide compound, not yet the complete catalyst, was treated in one

of three ways. In Example 1a, the precipitated multimetal cyanide compound was filtered and washed with water to form a wet filter cake, which was utilized as Example 1a. In Example 1b, the wet filter cake was further dispersed in propoxylated glycerine with a molecular weight of 900 to form a catalyst suspension in accordance with claim 1 of the present invention. Finally, in Example 1c, a separate portion of the wet filter cake was vacuum dried to form a catalyst powder, similar to the powders utilized in the prior art references. Each of these catalyst preparations was then utilized in a ring-opening polymerization of the alkylene oxide propylene oxide. The time to induction clearly shows that Example 1b, the catalyst suspension prepared in accordance with claim 1 of the present application, was the most catalytically active. It was unexpected that essentially the same catalyst would have very different catalytic activity depending on whether it was utilized as a wet filter cake, as a suspension, or in its powdered form.

Applicants respectfully submit that the accompanying Declaration clearly shows unexpected results of the catalyst suspensions of the present application that are not obvious in view of the cited references taken alone or in combination.

In view of the remarks set forth above, it is respectfully submitted that the §102(b) and §102(a) rejections of independent claim 1 are overcome. Furthermore, claims 2-12 and 15 depend from the novel and unobvious features of claim 1. Hence, any rejections of these dependent claims are also overcome.

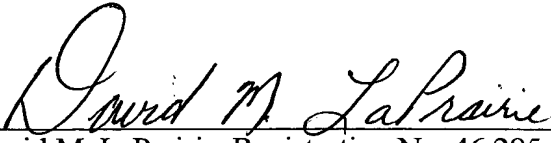
It is respectfully submitted that the claims, as amended, are now presented in condition for allowance, which allowance is respectfully solicited. Further and favorable reconsideration of the outstanding Office Action is hereby requested.

The Commissioner is authorized to charge our deposit account no. 08-2789 for any additional fees or credit the account for any overpayment.

Respectfully submitted,

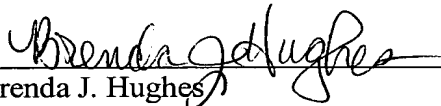
**HOWARD & HOWARD ATTORNEYS, P.C.**

February 11, 2003  
Date

  
David M. LaPrairie, Registration No. 46,295  
The Pinehurst Office Center, Suite 101  
39400 Woodward Avenue  
Bloomfield Hills, MI 48304-5151  
(248) 723-0442

**CERTIFICATE OF MAILING**

I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on **February 11, 2003**.

  
Brenda J. Hughes

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**VERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please replace claim 1 with the following:

1. (Twice Amended) A catalyst suspension for the ring-opening polymerization of alkylene oxides, comprising

a) at least one multimetal cyanide compound having a crystalline structure and a content of platelet-shaped particles of at least 30% by weight, based on the multimetal cyanide compound, and/or

b) at least one organic complexing agent

c) water and/or

d) at least one polyether and/or

e) at least one surface-active substance, with the proviso that at least component a) and at least two of the components b) to e) have to be present

wherein said catalyst suspension is not an intermediate and is directly used as a polymerization catalyst in the ring-opening polymerization of alkylene oxides.